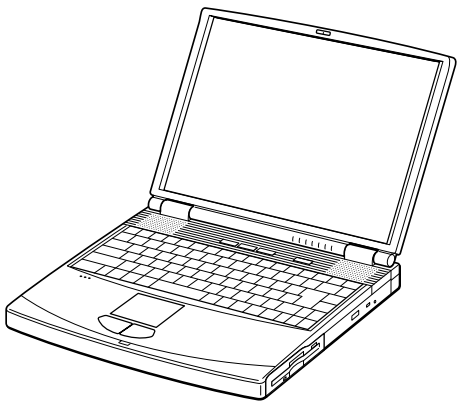
# PCG-F420/F480/F490

## SERVICE MANUAL

*US Model*
*Canadian Model*



Illust : PCG-F490

i™ S400

VAIO

NOTEBOOK COMPUTER

SONY®

9-872-058-11

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Caution Markings for Lithium/Ion Battery - The following or similar texts shall be provided on battery pack of equipment or in both the operating and the service instructions.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.
Dispose of used battery promptly.
Keep away from children.

CAUTION: Changing the back up battery.
- Overcharging, short circuiting, reverse charging, multilation or incineration of the cells must be avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.

## Service and Inspection Precautions

### 1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

### 2. Use designated parts only

The set's components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the ⚠ mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

### 3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

### 4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

### 5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

### 6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

**LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.**

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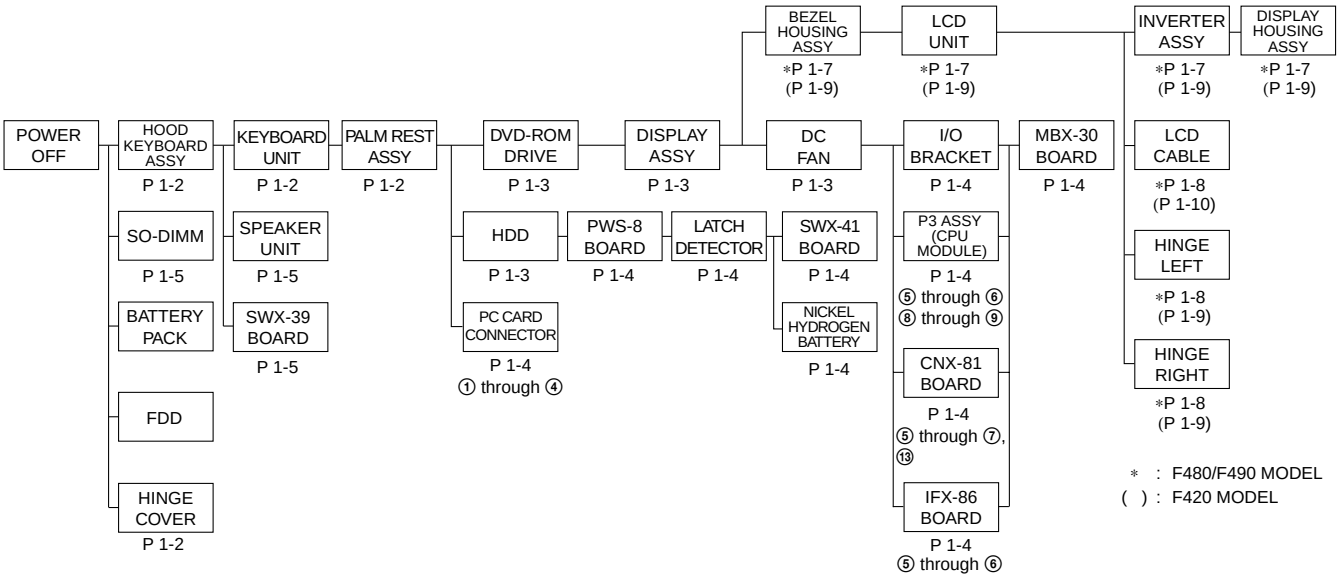
- Abbreviations
  UC : US model / Canadian model

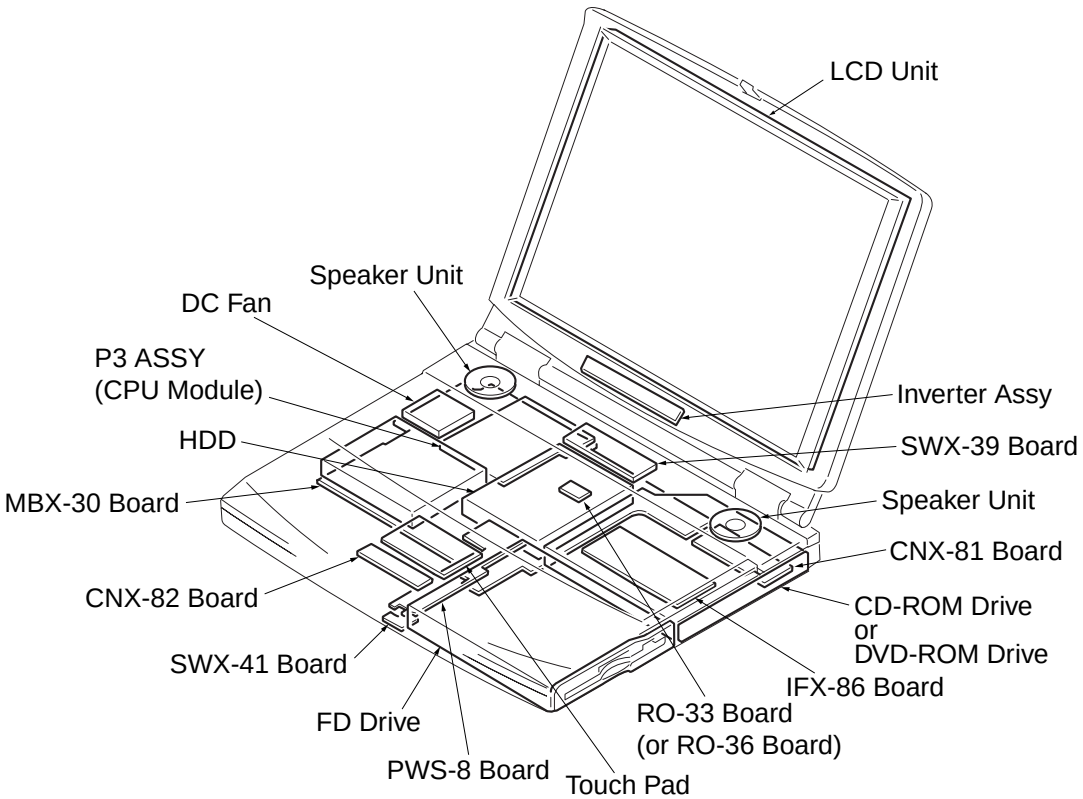
# 1-1. Flowchart




• P XX means pages that appears in this manual.

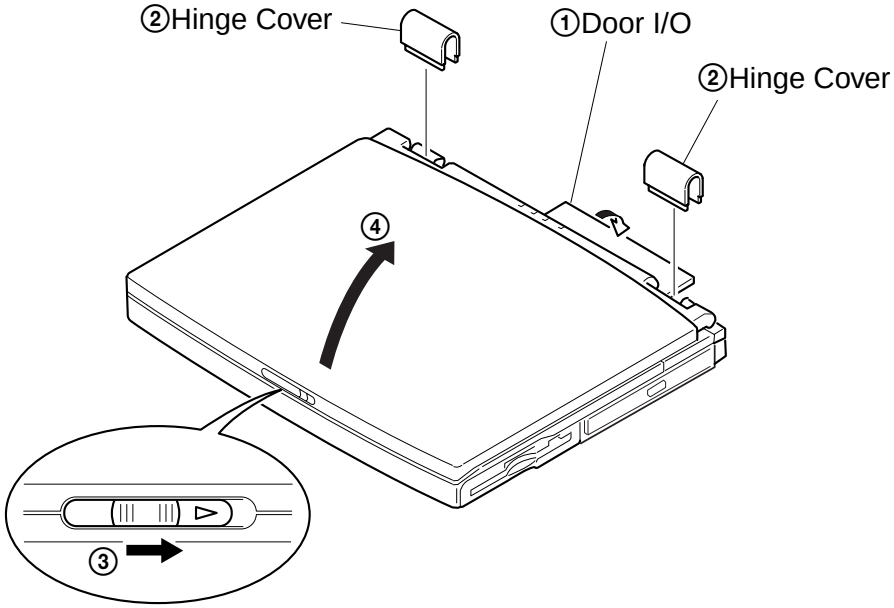
• Remember that hard disk drives are easily damaged by vibration. Always handle with care.

# 1-2. Main Electrical Parts Location Diagram

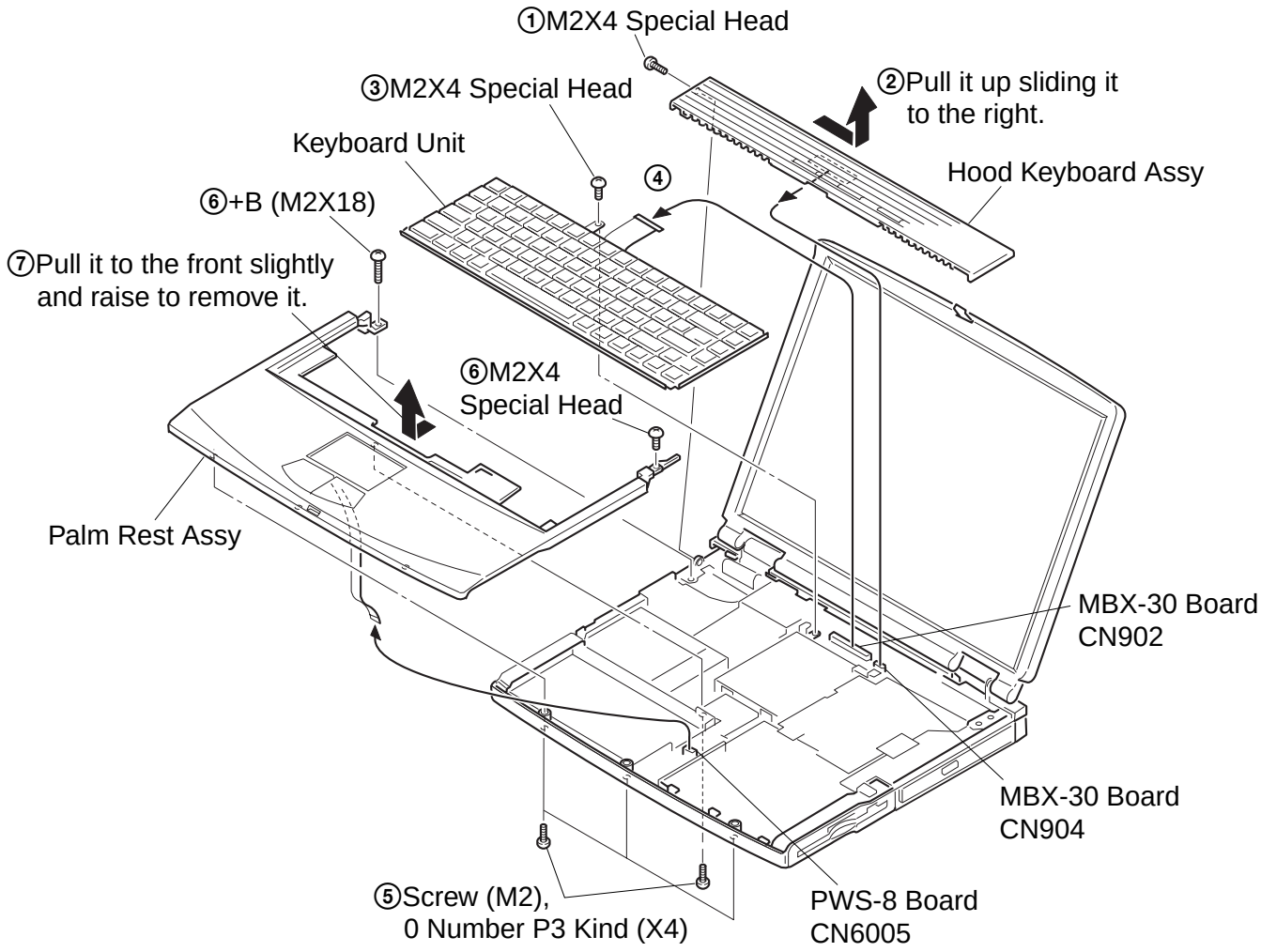


# 1-3.Removal

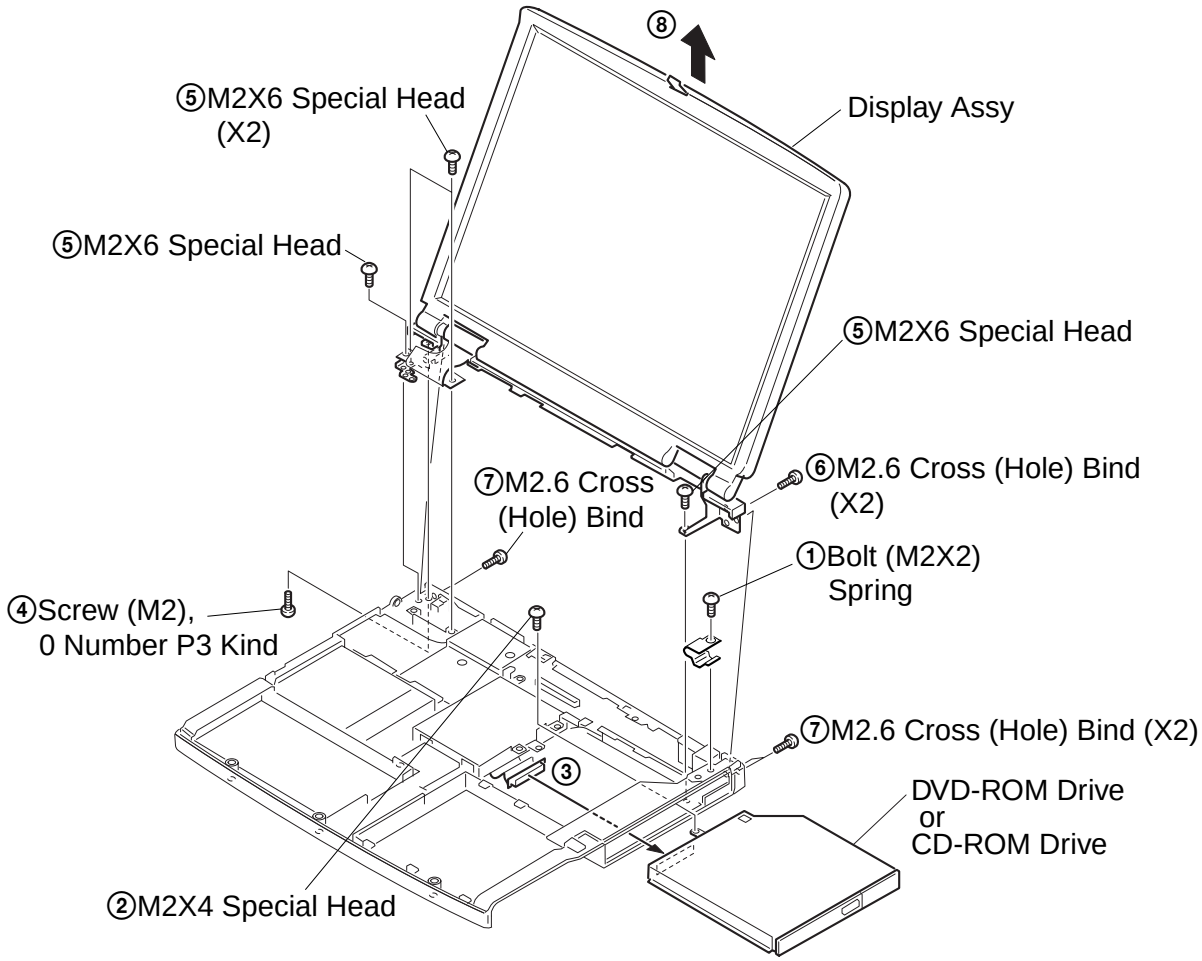
### 1. Hinge Cover



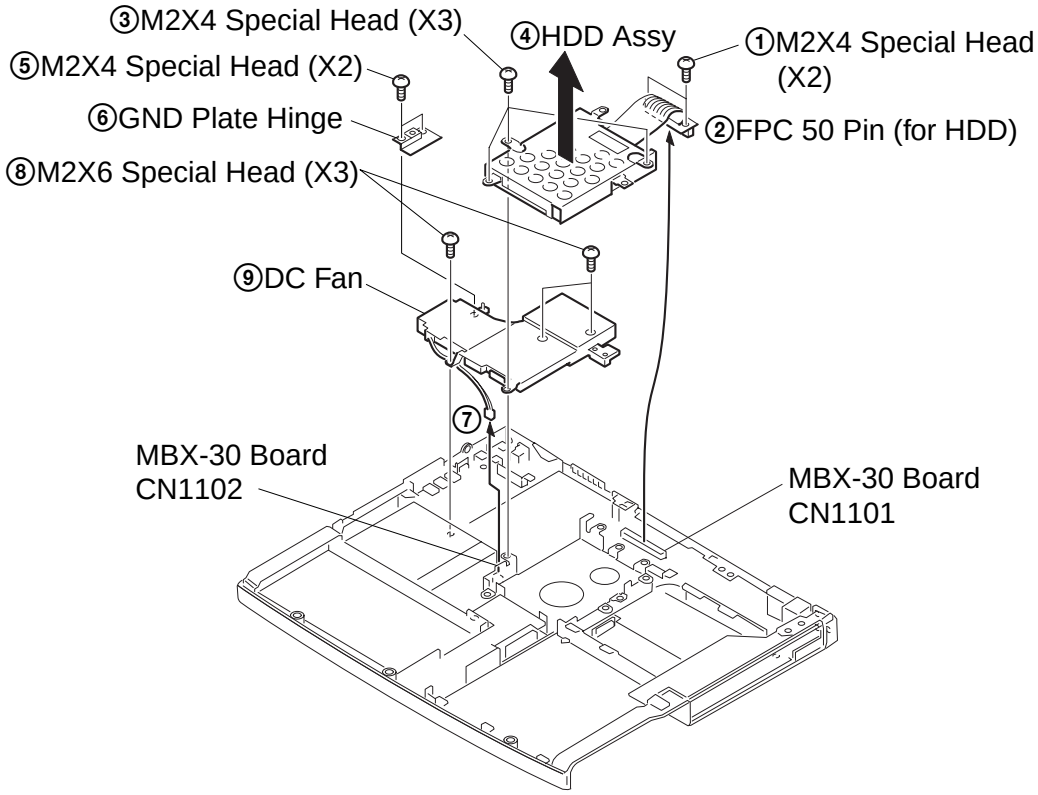

### 2. Keyboard Unit, Palm Rest Assy, Hood Keyboard Assy



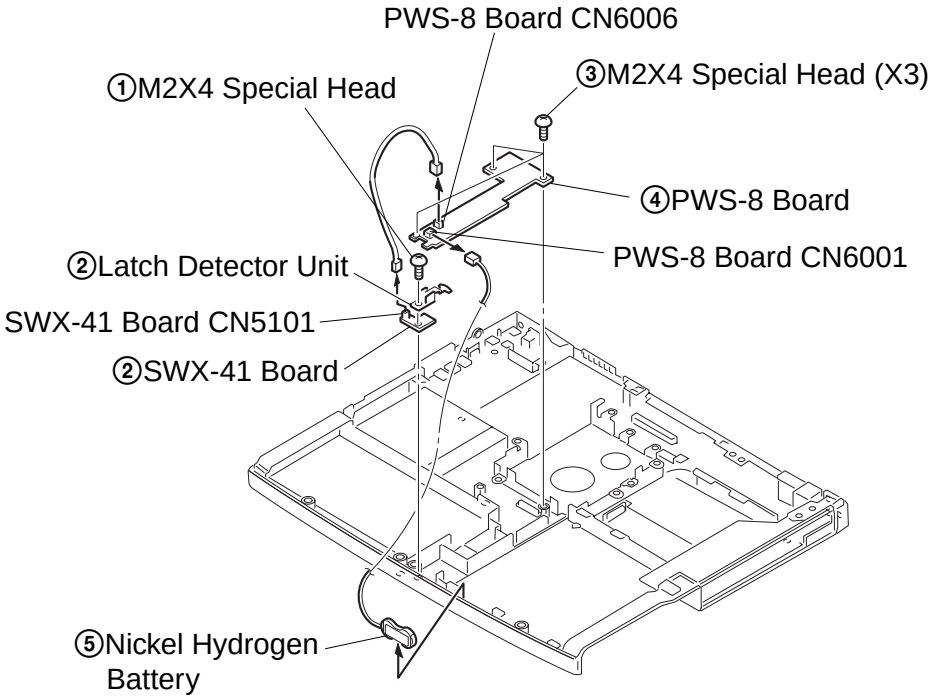
### *3. Display Assy, DVD-ROM Drive*



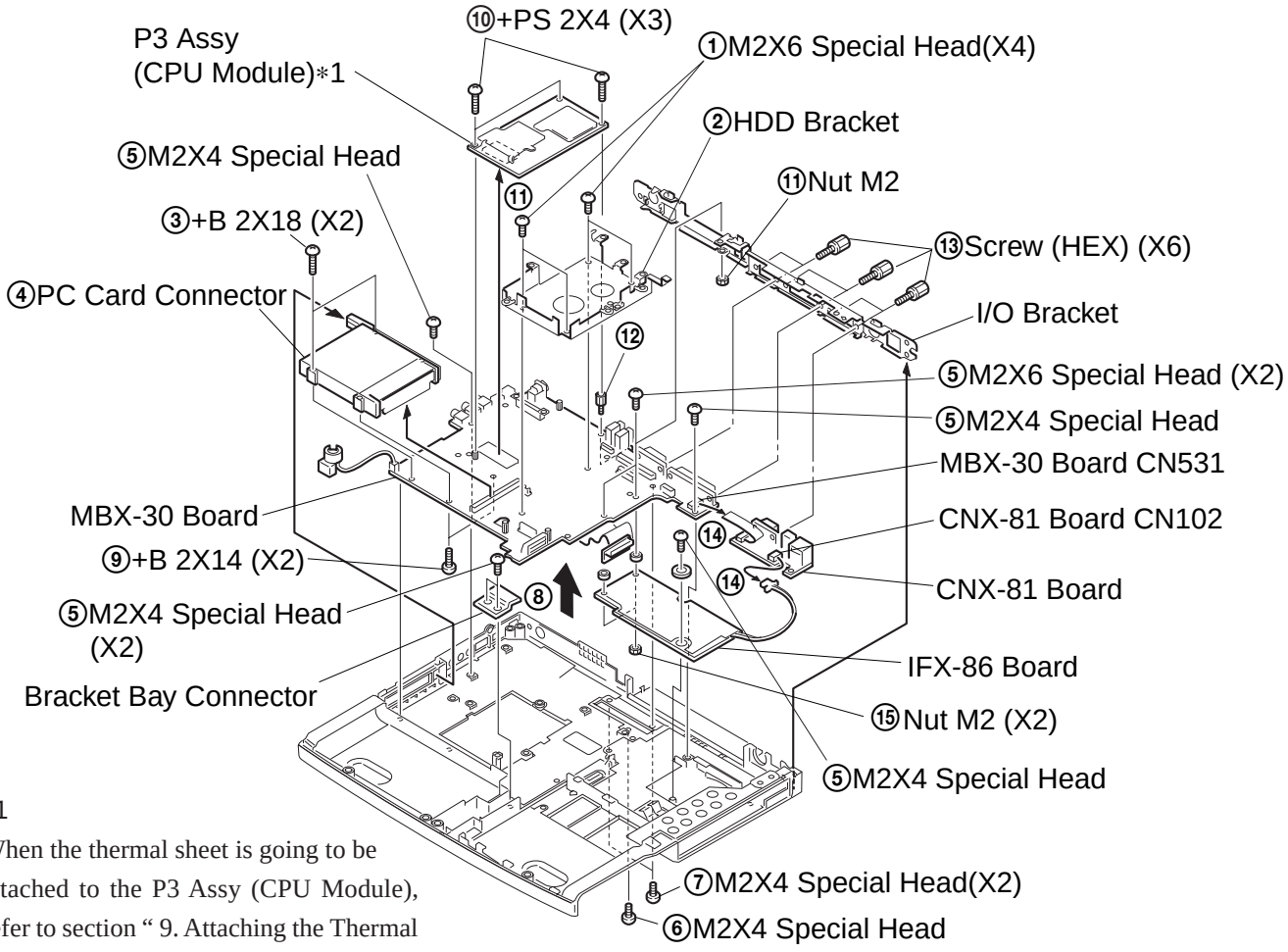

### *4. HDD Assy, DC Fan*



### *5. SWX-41 Board, Latch Detector Unit, PWS-8 Board, Nickel Hydrogen Battery*

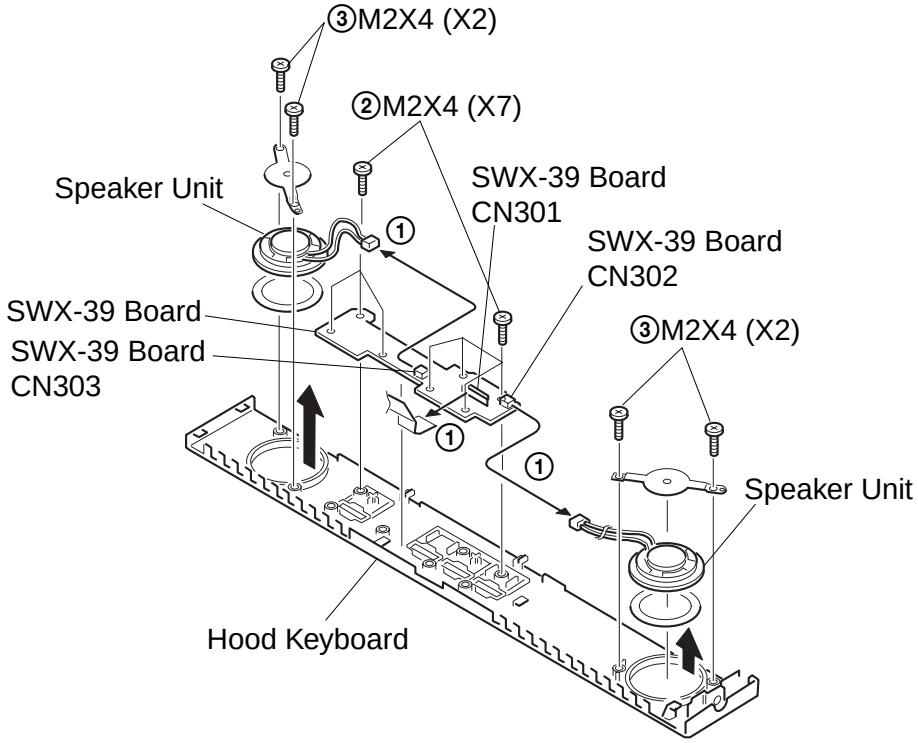



### *6. PC Card Connector, IFX-86 Board, CNX-81 Board, P3 Assy (CPU Module), MBX-30 Board*

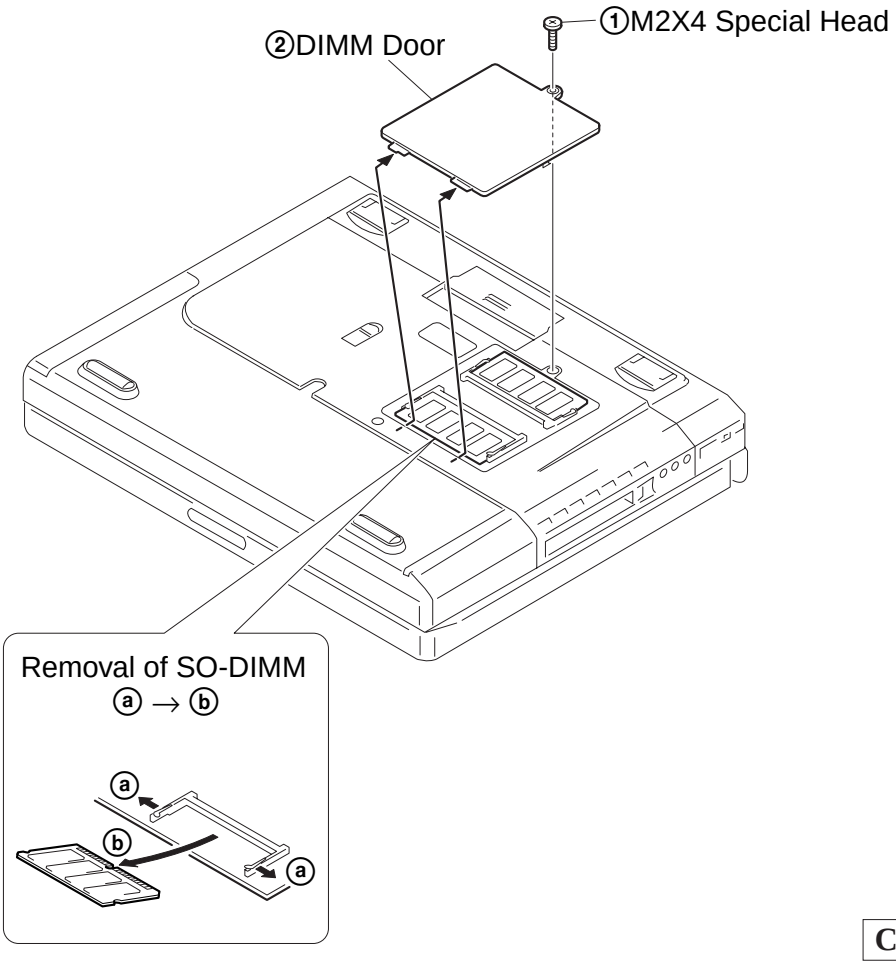



*1
When the thermal sheet is going to be attached to the P3 Assy (CPU Module), refer to section " 9. Attaching the Thermal Sheet ".

### *7. Speaker Unit, SWX-39 Board*




### *8. SO-DIMM*

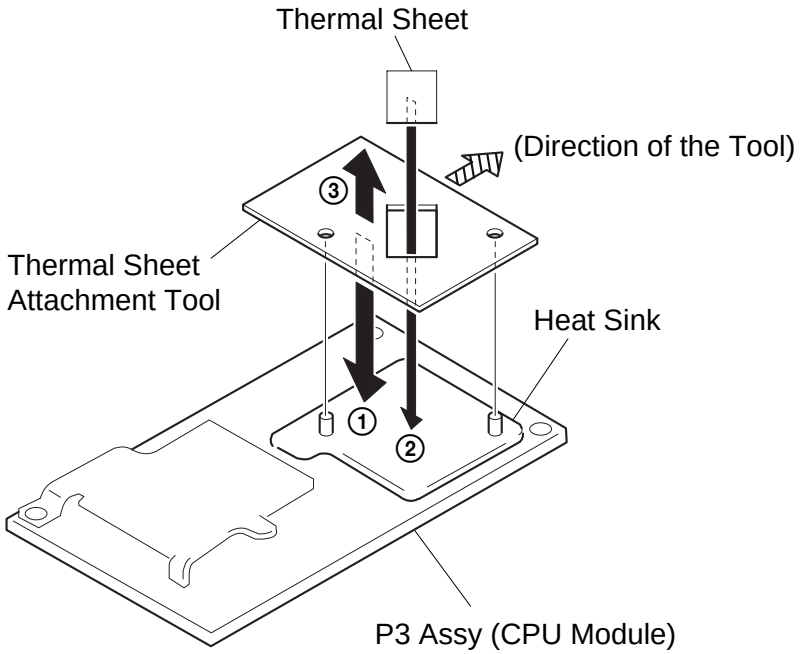


## *9. Attaching the Thermal Sheet*

Attach the thermal sheet (20 × 11 mm) to the heat sink of the P3 assembly (CPU module) to be used with the PCG-F420/F480/F490.

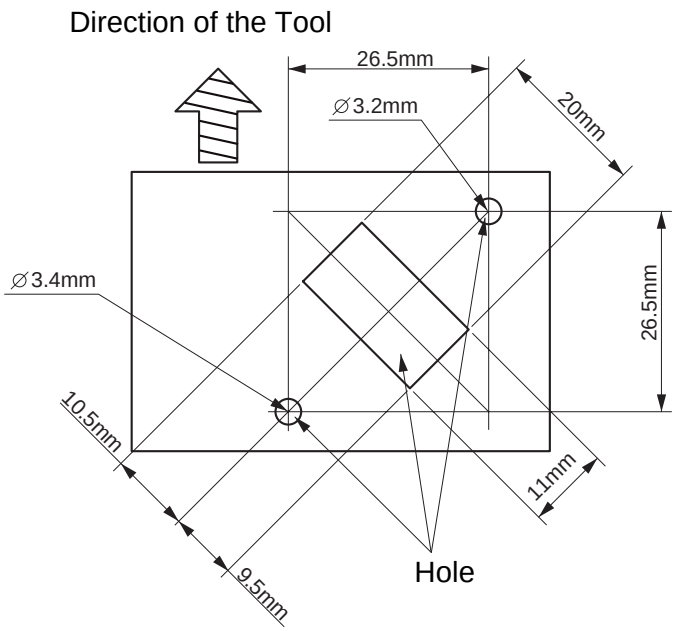
Because the heat dissipation effect of the thermal sheet (thermal conductivity sheet) changes depending on the position where it is attached, prepare the following [Thermal sheet attachment tool] to attach the thermal sheet.

### [Method to attach thermal sheet]



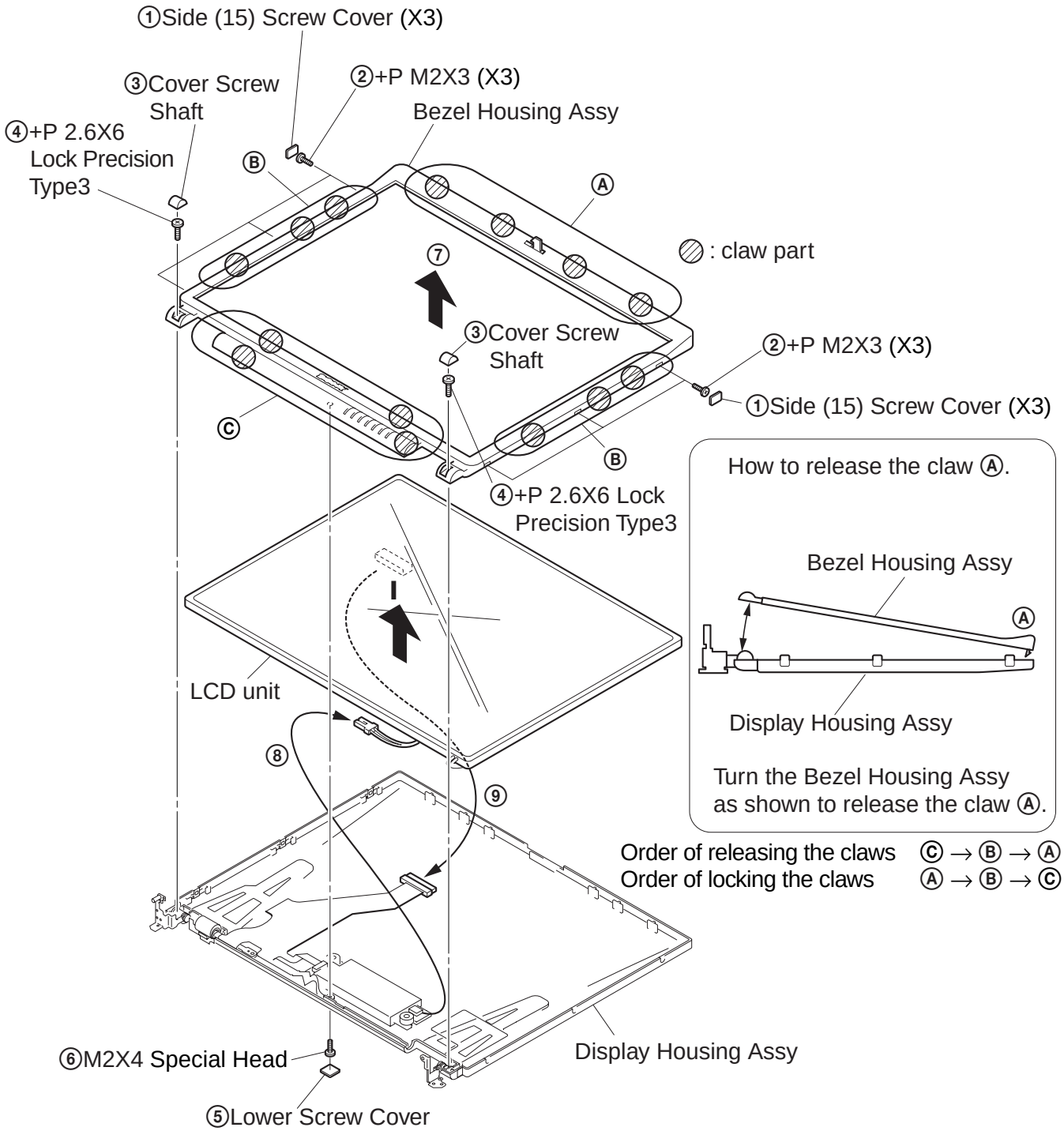

### [Thermal sheet attachment tool]

Prepare a thick paper or the like having the following dimensions by writing the thick paper into the actual size of the thermal sheet. (The pattern is shown in the actual sizes.)

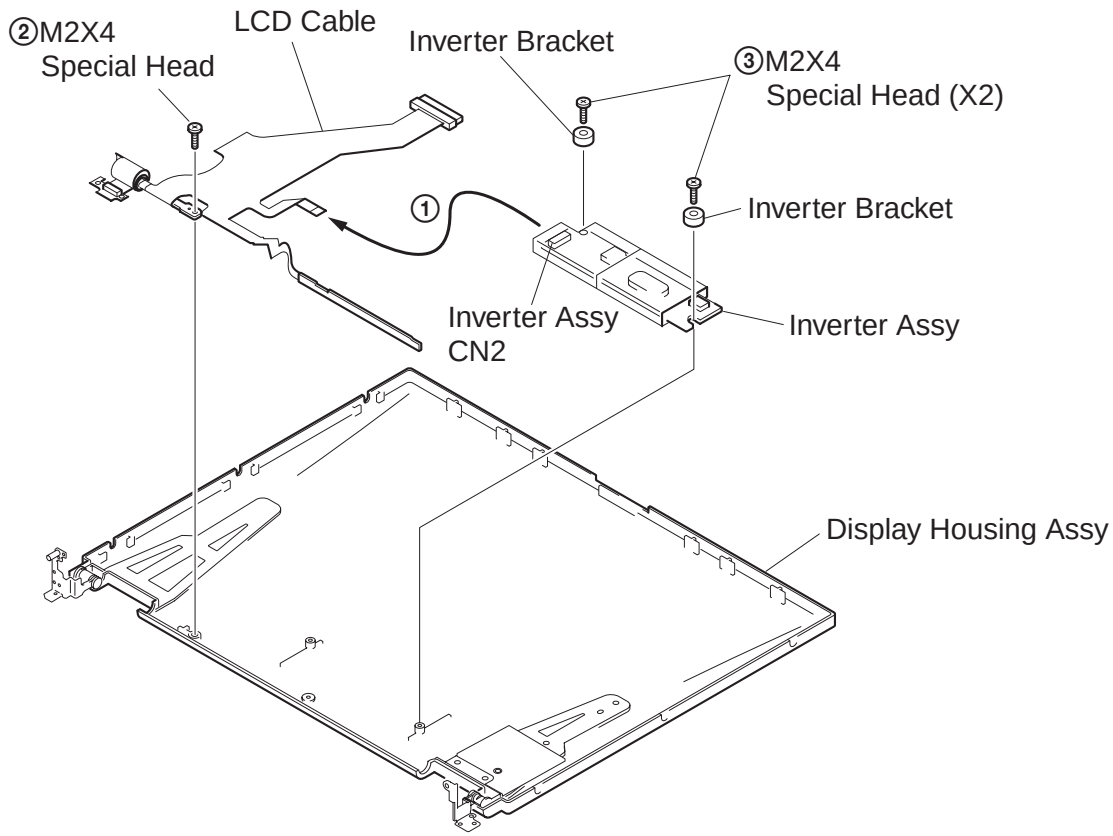


## *10. LCD Section (F480/F490 MODEL)*

### 1. Bezel Housing Assy, LCD Unit (15 inch)

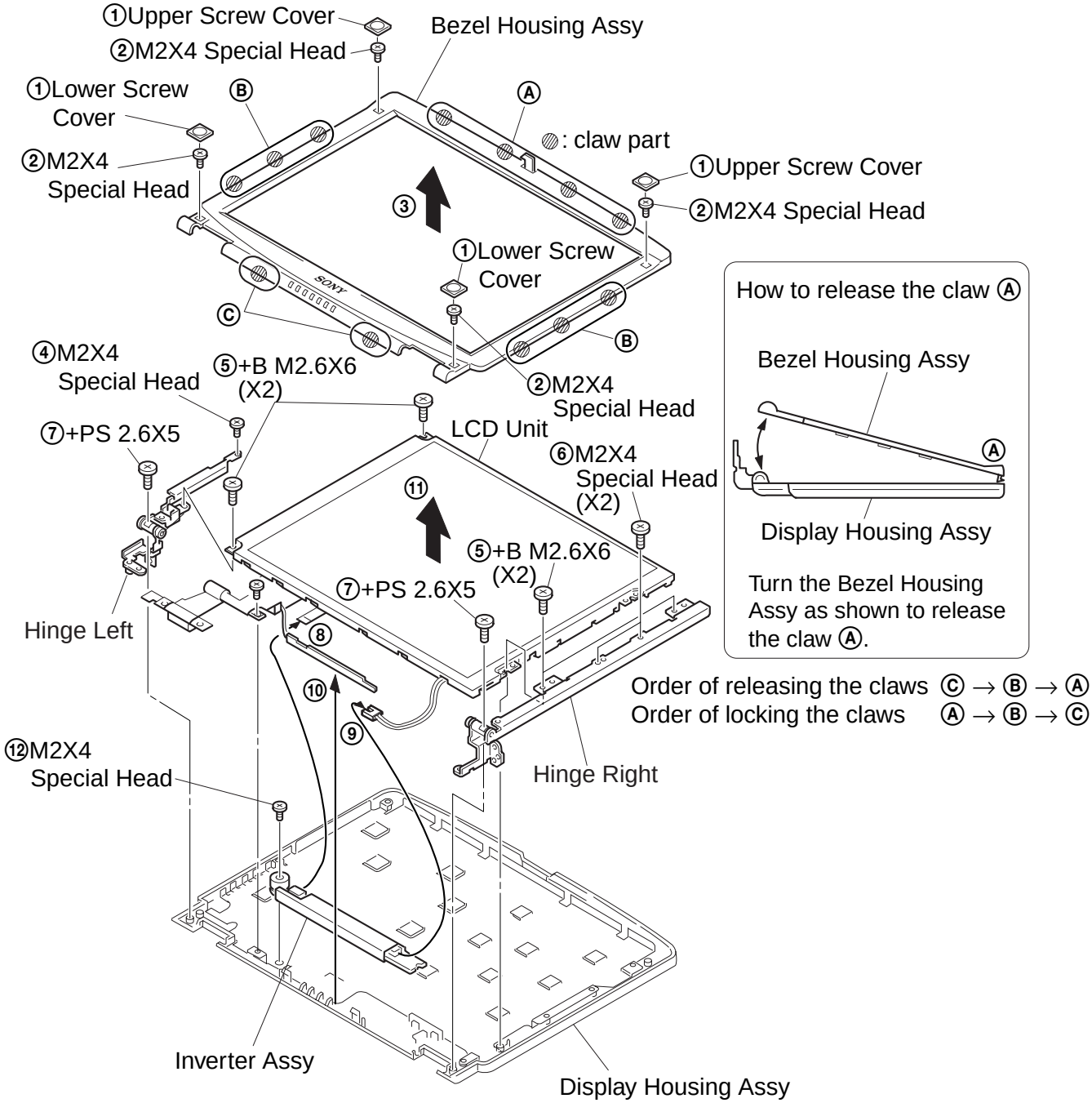


## 2. Inverter Assy, LCD Cable, Display Housing Assy

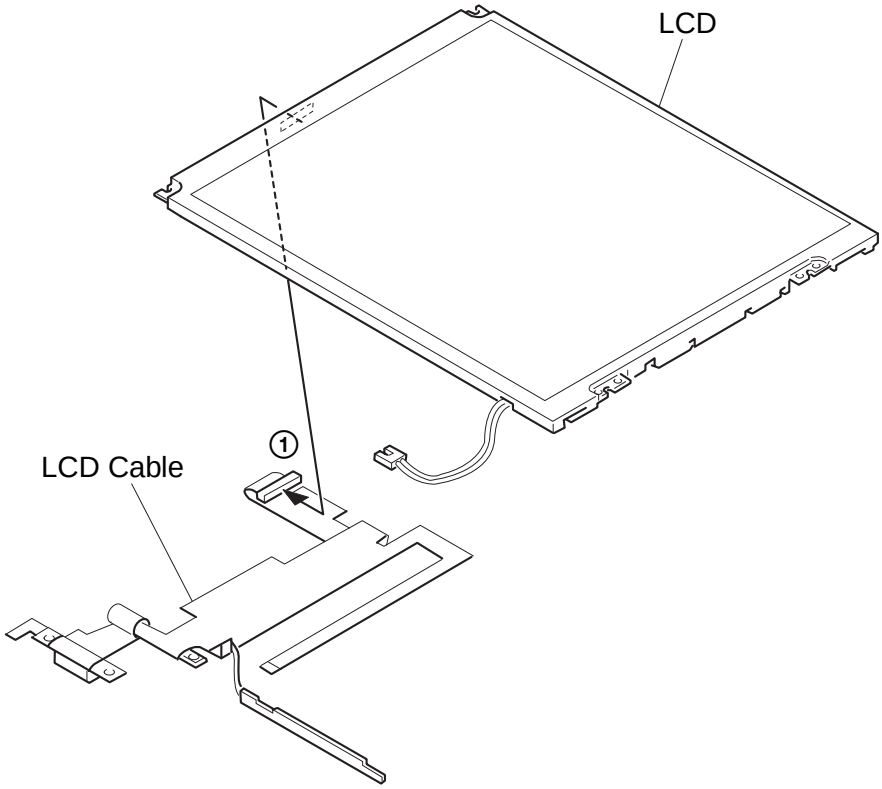


## *11. LCD Section (F420 MODEL)*

### 1. Bezel Housing Assy, LCD Unit (13 inch), Display Housing Assy, Inverter Assy, Hinge Left, Hinge Right



**2. LCD Cable**



# 2-1. Required Tools and Peripheral Devices

| | Tools and Peripheral Devices | Test Items |
|---|---|---|
| 1 | Serial Loopback Tool<br>Specified Loopback Tool (Refer to next page.) | Serial Port (COM) test |
| 2 | Parallel Loopback Tool<br>Specified Loopback Tool (Refer to next page.) | Parallel Port (printer) test |
| 3 | V.34 Modem and Line Simulator | Modem test |
| 4 | PC Card Tester<br>PCCtest 450 Made by Sycard Corp. | PC Card test |
| 5 | PCG-N505, XR series VAIO for IrDA Function Test | IrDA Function test |
| 6 | Port Replicator PCGA-PRF1 for Port Replicator Connector Test | Port Replicator Connector test |
| 7 | FDD Bay supplied | FDD test |
| 8 | Diagnostics FD Media | (Diagnostics starting software) |
| 9 | Diagnostics CD-ROM Media | (Diagnostics software) |
| 10 | Battery supplied | Battery related tests |
| 11 | AC Adaptor supplied | (Power supply for diagnostics) |
| 12 | PCG-N505, XR series VAIO for IEEE1394 Test | IEEE1394 Test |

## *[Reference] On Serial/Parallel Loopback Tool*

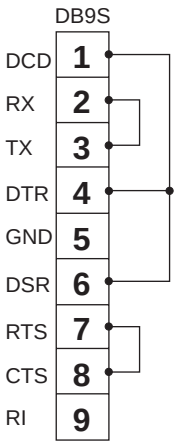
• The serial loopback tool and the parallel loopback tool are necessary for diagnostics of the serial communication line and the parallel communication line. Fabricate the serial loopback tool and the parallel loopback tool locally referring to the connection diagrams shown below.

Serial Loopback Tool : For diagnostics of serial port

SERIAL LOOPBACK CONNECTOR CONNECTION DIAGRAM

• Connector Types DB9S (Female)
• Interface Standard RS-232C
• Loopback Data & Handshake

**NOTE:** The black round mark "●" indicates soldering.

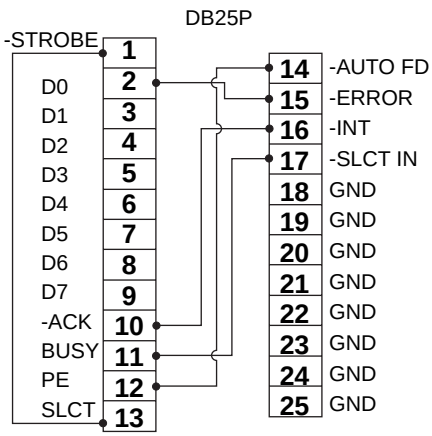



Parallel Loopback Tool : For diagnostics of parallel port

PARALLEL LOOPBACK CONNECTOR CONNECTION DIAGRAM

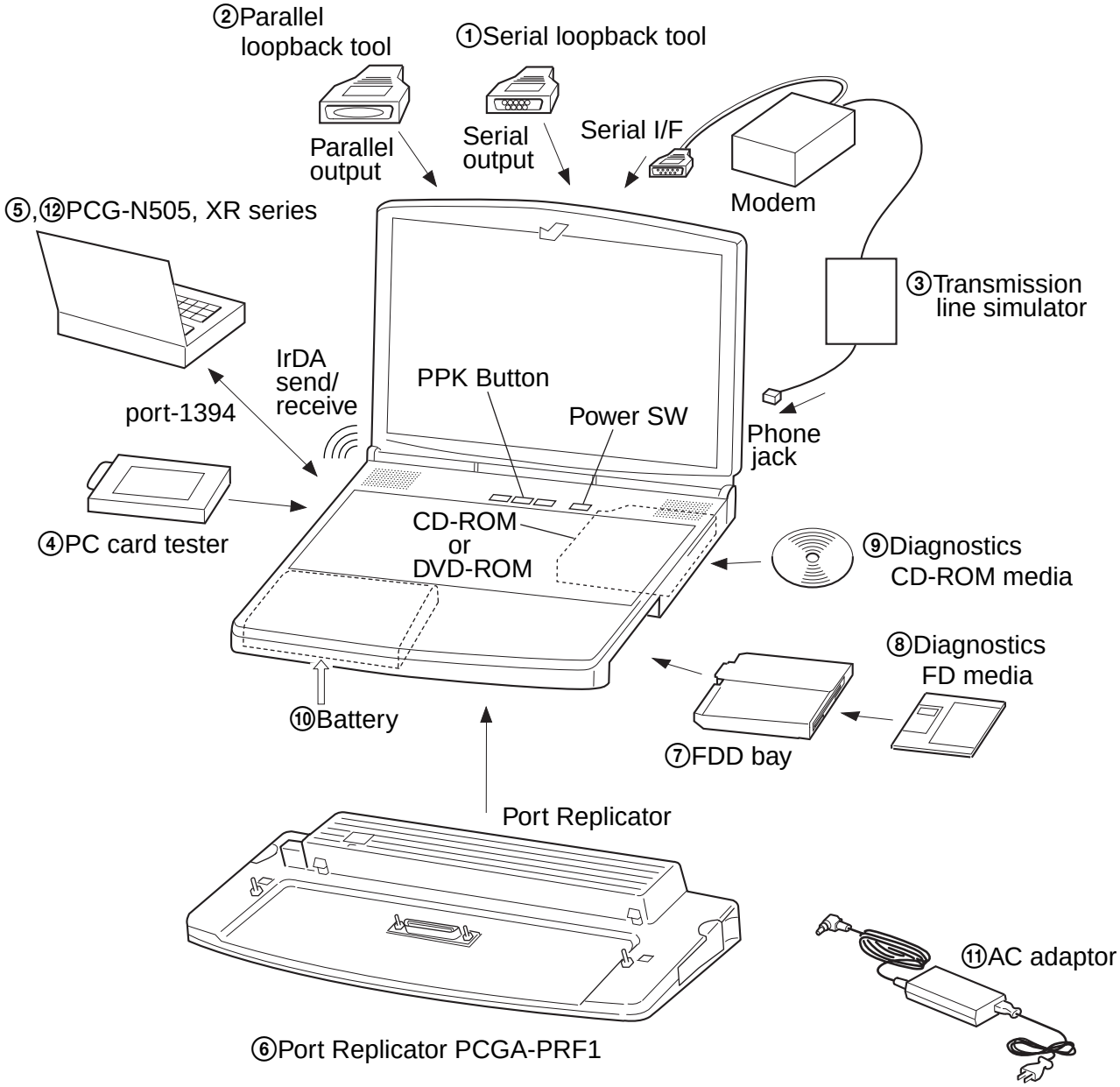
• Connector Types DB25P(Male)
• Interface Standard Centronics
• Loopback Status to Commands

**NOTE:** The black round mark "●" indicates soldering.



# 2-2. Tools and Peripheral Device Connection

System Connection Diagram



# 2-3. How to Start the Diagnostics

**Precaution:** The supplied floppy disk containing the diagnostics program can be damaged because it will be written the Log and used as FDD read-write test. Be sure to make a backup of the diagnostics floppy disk and use a backup disk for diagnostics.

### *Starting up the diagnostics*

- Specify the FDD as the startup drive so that the system boots up from the diagnostics FD.
- Insert the diagnostics CD-ROM media into the DVD-ROM bay or the CD-ROM bay. Insert the diagnostics FD into the FDD bay. Turn off the main power of the system once and back on to boot up the system from the diagnostics FD.
- When the system is booted from the diagnostics floppy disk, the start menu appears. Select a desired item to execute the diagnostics. When PASS is displayed as the result of diagnostics, the test is ended without any errors. When FAIL is displayed as the result of diagnostics, the test is ended with some errors.

# 2-4. Test Items

The test items are shown below.

### *2-4-1. Diagnostics Menu*

List of Test Items

The test items which are performed one after another or by selecting a specific item, are listed as follows.

(Short descriptions of the respective test items follow later.)

1. Check ROM Information
2. Battery test group
    (1) Battery 1 test
    (2) Battery 2 test
    (3) Fan test
3. CD ROM test
4. FDD test
5. HDD test
6. Touch pad test
7. LED test
8. Main memory test
9. Main system test
10. Mouse test
11. Parallel loopback test
12. PC Card test
13. Serial loopback test
14. Port Replicator connector test
15. IrDA test
16. Video test
17. IEEE1394 test
18. PPK test
19. Aging (Short time) HDD test
20. Aging (Long time) HDD test

21. Aging (Short time)
22. Aging (Long time)

The following tests are performed using Windows 98.

A. Audio test group
   (1) Audio test (MIC test)
   (2) Audio test (Speaker test)

B. Modem loopback test

## *2-4-2. Short Descriptions of the Test Items*

1. Check ROM Information
   Indicates the BIOS which is currently used.

2. Battery test group
   Performs charging and discharging test of a battery.
   A used battery with 30% to 80% already charged battery is necessary.
   (1) Battery 1 test
      This tests the battery 1.
   (2) Battery 2 test
      This tests the battery 2.

      Start up the battery 2 test program only from the FD image from the DOS command line of the CD-ROM/DVD-ROM as described below.
      Execute the following procedure and insert both the CD-ROM and FDD.
      1. Selects “3: Quit MAIN MENU” from the main menu.
      2. The ordinary DOS prompt “A:\>” appears. Input “G:[Enter]”.
         Then remove the FDD and insert the battery 2 instead of the FDD.
      3. The prompt “G:\>PRG” appears and the active drive is changed. Input “CD \FD” to change directory.
      4. When the prompt “G:\FD>” appears, input the command “BATT2”.
      5. The battery 2 test starts. Execute the battery 2 test by following the instructions that are displayed.
      6. Remove the battery 2 from the bay and insert the FDD that is removed in step 2.
      7. When the test is complete, the prompt returns to “G:\FD>”. Input “A:” to change the drive.
      8. Input “AUTOEXEC” to return to the main menu.

   (3) Fan test
      This tests the fan.

3. CD ROM test
   Tests the CD-ROM.

4. FDD test
   Tests the FDD. Note that the diagnostics floppy disk can be damaged when this test ends in fail.

5. HDD test
   Tests the HDD.

6. Touch pad test

Tests the touch pad. Start pressing the keyboard surely from an end of a keyboard.
The Fn key is disabled. Press “Fn+End” instead.

7. LED test

Check that the LEDs start illuminating from the left of the LEDs.

8. Main memory test

Tests the memory.

9. Main system test

Tests the entire system including CPU, MATH and DMA.

10. Mouse test

Tests the mouse. Move the cursor inside the white square mark ( □ ) and operate the system in accordance with instruction displayed.

11. Parallel loopback test

Tests the parallel (printer) port. The jig is necessary.
Connect the jig to the parallel port.

12. PC Card test

Tests the PC card. The PC card tester jig is necessary. Insert and remove the PC card tester in accordance with instruction displayed.

13. Serial loopback test

Tests the COM port. The serial loopback jig is necessary.
Connect the serial loopback jig to the COM port.

14. Port Replicator connector test

To perform this test, the port replicator and USB tester are necessary.

15. IrDA test

Tests the IrDA communication.
To perform this test, the PCG-N505, XR series computer is necessary for communication.

16. Video test

Tests the circuit blocks related to the video display.
Tests the various video modes.

17. IEEE1394 test

Executes the data transfer test of the IEEE1394.

18. PPK test

Tests the PPK.

19. Aging (Short time) HDD test

Executes the memory and main system tests repeatedly including the HDD test.
It takes about four hours. Contents of HDD are destroyed when this test is performed.

20. Aging (Long time) HDD test

Executes the memory and main system tests repeatedly including the HDD test.
It takes about ten hours. Contents of HDD are destroyed when this test is performed.

21. Aging (Short time)

Executes the memory and main system tests repeatedly. It takes about fifteen minutes.

22. Aging (Long time)

Executes the memory and main system tests repeatedly. It takes about ten hours.

A. Audio test group

Tests the audio related items.

(1) Audio test (MIC test)

Tests microphone.

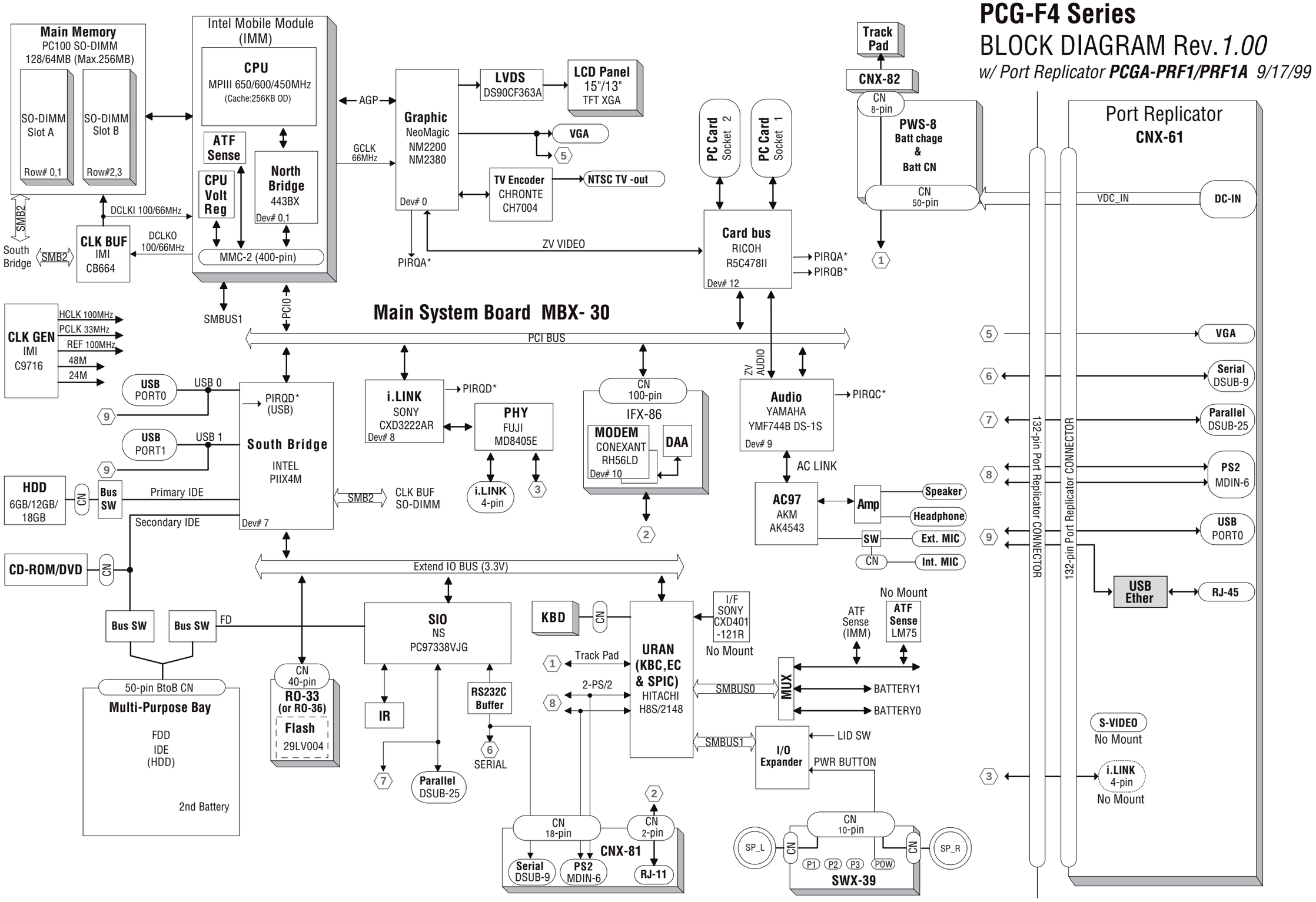
(2) Audio test (Speaker test)

Tests speaker.

B. Modem loopback test

Tests the data send/receive between modem and computer. The jig modem is necessary.
Connect the jig modem to the modem port of the PCG-F4 series VAIO.

# PCG-F4 Series
## BLOCK DIAGRAM Rev.*1.00*
*w/ Port Replicator **PCGA-PRF1/PRF1A** 9/17/99*

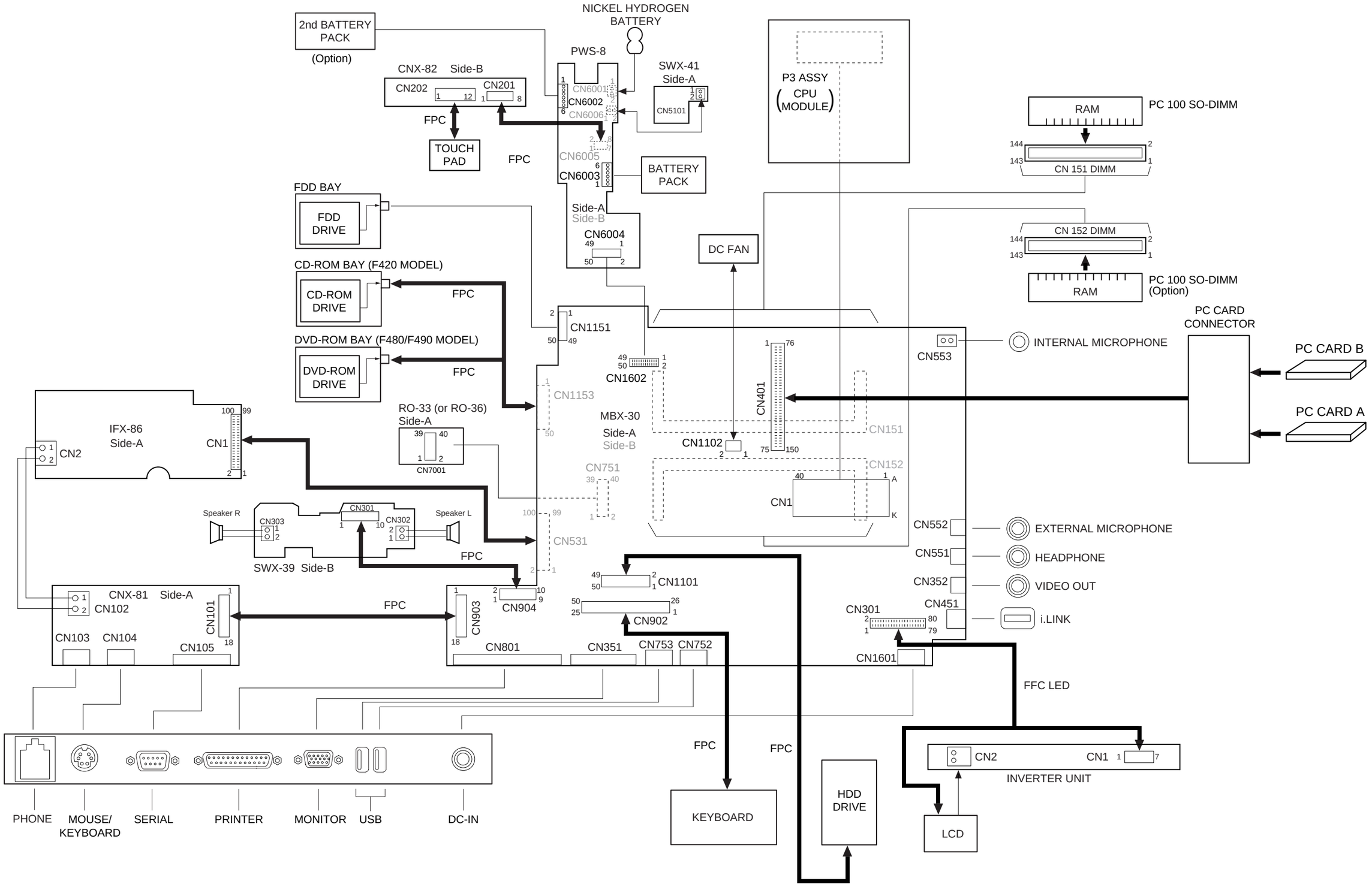





Confidential

# CHAPTER 4.

# FRAME HARNESS DIAGRAM



# CHAPTER 5.
# EXPLODED VIEWS AND PARTS LIST

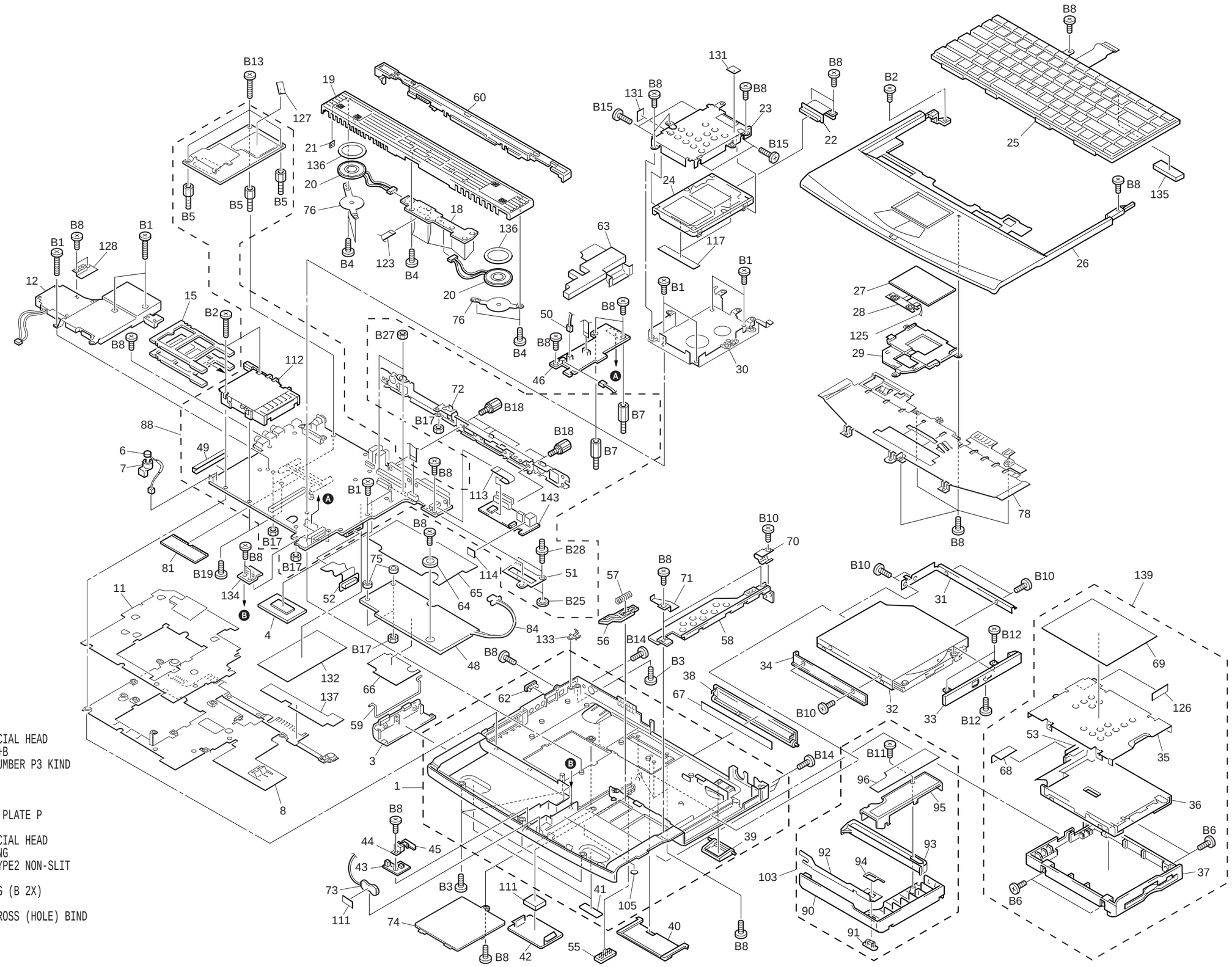
**NOTE:**

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

| |
|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. |
| Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |

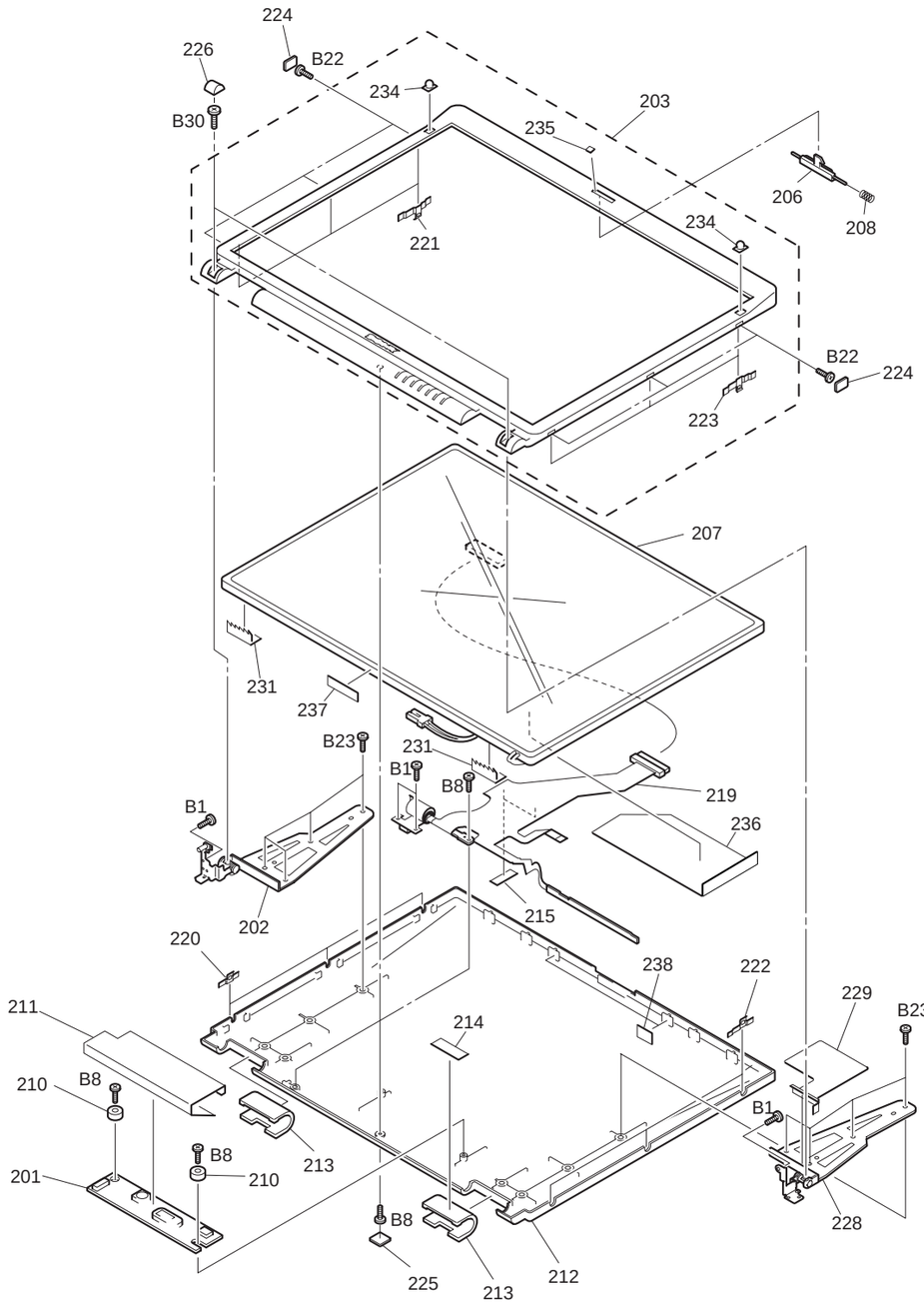
# 5-1. Main Section

| Ref.No. | Part No. | Description |
|---|---|---|
| 1 | X-4622-445-3 | ASSY BOTTOM |
| 3 | 4-640-837-12 | DOOR BATTERY |
| 4 | A-8056-756-A | RO-33 COMPLETE PWB (or RO-36 COMPLETE PWB) |
| 6 | 1-542-331-11 | MICROPHONE UNIT |
| * 7 | 4-641-495-02 | HOLDER MIC |
| * 8 | 4-644-346-02 | HEATSINK BOTTOM |
| * 11 | 4-644-348-01 | INSULATOR HEATSINK BOTTOM |
| 12 | 1-763-448-11 | WITH, DC FAN HEATSINK |
| 15 | 4-643-832-02 | DUMMY CARD |
| 18 | A-8056-488-A | COMPLETE PWB SWX-39 |
| 19 | X-4622-449-1 | ASSY HOOD KEYBOARD |
| 20 | 1-529-287-11 | SPEAKER UNIT |
| 21 | 3-718-233-01 | NUT, PLATE |
| 22 | 1-790-639-21 | FPC 50PIN (FOR HDD) |
| 23 | 4-644-339-01 | COVER HDD |
| 24 | 1-772-525-11 | (F420)...HDD (6.0GB) -DK23AA |
| 24 | 1-772-526-11 | (F420)...HDD (6.0GB) -DARA206000 |
| 24 | 1-772-357-11 | (F480)...HDD (12.0GB) |
| 24 | 1-772-387-11 | (F490)...HDD (18.1GB) |
| 25 | 1-418-041-11 | KEY BOARD UNIT |
| 26 | X-4622-446-1 | ASSY PALMREST |
| 27 | 1-759-708-11 | PAD, TOUCH |
| 28 | A-8056-483-A | COMPLETE PWB CNX-82 |
| 29 | 4-644-352-01 | BRACKET PAD |
| * 30 | 4-644-336-01 | BRACKET, HDD |
| 31 | 4-640-861-04 | BRACKET CD-ROM R |
| 32 | 1-772-033-11 | (F420)...CD-ROM (X24) |
| 32 | 1-772-211-11 | (F480/F490)...DVD-ROM (4X) |
| 33 | X-4622-494-2 | (F420)...ASSY DOOR CD-ROM (NHA) |
| 33 | X-4622-495-2 | (F480/F490)...ASSY DOOR DVD-ROM (NHA) |
| 34 | 4-640-860-02 | BRACKET (CD-ROM L) |
| 35 | 4-640-828-01 | PLATE FDD |
| 36 | 1-772-034-11 | FDD |
| 37 | X-4622-493-1 | (F420)...ASSY BOTTOM FDD (NHA) |
| 37 | X-4622-626-1 | (F480/F490)...ASSY BOTTOM FDD (2) |
| 38 | 4-640-838-11 | DOOR I/O |
| 39 | 4-640-850-11 | FOOT REAR |
| 40 | 4-640-863-12 | DOOR DOCKING CONNECTOR |
| 41 | 4-640-851-01 | FOOT FRONT |
| 42 | 4-637-916-12 | DOOR FLASH |
| 43 | A-8056-489-A | COMPLETE PWB SWX-41 |
| 44 | 4-644-190-01 | LATCH DETECTOR BASE (K) |
| 45 | 4-635-255-01 | LATCH DETECTOR |
| 46 | A-8046-835-A | ASSY PWS-8 (S) |
| 48 | A-8056-484-A | COMPLETE PWB IFX-86 (UC) |
| 49 | 4-644-364-01 | INSULATOR PC CARD |
| 50 | 1-790-585-11 | CABLE (2P) |
| 51 | X-4622-085-1 | ASSY PANEL CONNECTOR |
| 52 | 1-790-640-11 | FPC 50PIN (FOR CD-ROM) |
| 53 | 1-790-641-11 | FPC 50PIN (FOR FDD) |
| 55 | 4-640-845-11 | BUTTON BAY |
| 56 | 4-644-349-01 | LATCH BAY |
| * 57 | 4-640-854-01 | SPRING BAY |
| * 58 | 4-640-855-02 | BRACKET BOTTOM |
| * 59 | 4-640-857-01 | DOOR BATTERY SPRING |
| 60 | 4-644-345-01 | DISPLAY BASE |
| * 62 | 4-640-877-01 | LENS IR |
| 63 | 4-644-338-01 | COVER BATTERY CONNECTOR |
| * 64 | 4-641-188-01 | SPACER MODEM |
| 65 | 4-644-664-01 | INSULATOR MODEM A |
| 66 | 4-644-665-01 | INSULATOR MODEM B |
| * 67 | 4-641-366-02 | LABEL I/O |
| 68 | 4-641-629-01 | INSULATOR FDD |
| 69 | 4-641-763-01 | LABEL FD |
| * 70 | 4-641-850-01 | SPRING (CD-ROM), PLATE |
| * 71 | 4-641-851-02 | SPRING (FDD), PLATE |
| * 72 | 4-644-337-02 | BRACKET I/O |
| 73 | 1-756-038-11 | BATTERY, NICKEL HYDROGEN |
| 74 | 4-644-358-02 | DOOR DIMM |
| 75 | 4-644-343-01 | STAND OFF (IFX) |
| * 76 | 4-644-361-01 | BRACKET SPK |
| * 78 | 4-644-362-01 | PLATE PALMREST |
| 81 | 8-759-638-65 | (F420/F480)...IC HYM7V65801BLTQG-10S (PC 100 SO-DIMM 64MB) |
| 81 | 8-759-668-57 | (F420/F480)...IC HB52D88DC-B6FL (PC 100 SO-DIMM 64MB) |
| 81 | 8-759-665-37 | (F490)...IC KMM464S1724BT1-FL (PC 100 SO-DIMM 128MB) |
| 81 | 8-759-665-57 | (F490)...IC HYM71V65M1601LTX-10S (PC 100 SO-DIMM 128MB) |
| 84 | 1-959-405-11 | HARNESS 2P |
| 88 | A-8046-751-A | (F420)...MBX-30 (450 MBA) ASSY (S) |
| 88 | A-8046-556-A | (F480)...MBX-30 (600) ASSY (S) |
| 88 | A-8046-555-A | (F490)...MBX-30 (650) ASSY (S) |
| 90 | 4-640-833-11 | BOTTOM WEIGHT SAVER |
| 91 | 4-640-834-11 | BUTTON WEIGHT SAVER |
| * 92 | 4-640-847-01 | LATCH WEIGHT SAVER |
| 93 | 4-640-968-11 | ARM WEIGHT SAVER |
| * 94 | 4-640-969-01 | CLICKER WEIGHT SAVER |
| * 95 | 4-640-970-11 | COVER WEIGHT SAVER |
| * 96 | 4-641-764-01 | LABEL WEIGHT SAVER |
| 103 | A-8046-136-A | ASSY WEIGHT SAVER (NHA) |
| * 105 | 4-641-630-01 | COVER BAY HOLE |
| 111 | 4-636-094-01 | CUSHION FLASH |
| 112 | 1-793-554-11 | CONNECTOR,(EJECTOR) PC CARD |
| 113 | 1-790-708-11 | FFC (MBX-CNX) |
| 114 | 4-644-667-01 | COVER RJ-11 |
| 117 | 4-642-424-01 | CUSHION HDD2 |
| 123 | 1-790-711-21 | FFC (PPK) |
| 124 | 1-790-709-11 | FFC (SWX-TP) |
| 125 | 1-790-710-11 | FFC (SWX-PWS) |
| 126 | 4-644-053-01 | SPACER FDD |
| 127 | 4-644-350-01 | SHEET, THERMAL (Refer to page 1-6.) |
| * 128 | 4-645-432-01 | GND PLATE HINGE |
| 131 | 4-644-926-01 | CUSHION HDD |
| 132 | 4-644-347-01 | INSULATOR HDD |
| * 133 | 4-644-390-01 | BRACKET LOCK |
| * 134 | 4-645-433-01 | BRACKET BAY CONNECTOR |
| 135 | 4-645-496-01 | CUSHION KEYBOARD |
| 136 | 4-644-357-01 | CUSHION SPK |
| 137 | 4-641-835-11 | INSULATOR CNX-64 |
| 139 | A-8046-139-A | ASSY BAY (FD) (NHA) |
| 143 | A-8056-482-A | COMPLETE PWB CNX-81 |




| Ref.No. | Part No. | Description |
|---|---|---|
| B1 | 4-641-726-41 | SCREW (M2), SPECIAL HEAD |
| B2 | 4-644-518-01 | SCREW (M2X18), +B |
| B3 | 4-644-899-01 | SCREW (M2), 0 NUMBER P3 KIND |
| B4 | 4-639-112-01 | SCREW M2X4 |
| B5 | 4-644-402-01 | SCREW (MBX) |
| B6 | 4-641-656-02 | SCREW (M2.5), 0 PLATE P |
| B7 | 4-644-402-11 | SCREW (MBX) |
| B8 | 4-641-726-11 | SCREW (M2), SPECIAL HEAD |
| B10 | 4-640-694-41 | BOLT (M2), SPRING |
| B11 | 7-685-106-19 | SCREW +P 2X10 TYPE2 NON-SLIT |
| B12 | 4-642-229-01 | (F420)...TAPPING (B 2X) |
| B13 | 7-628-253-00 | SCREW +PS 2X4 |
| B14 | 4-645-497-01 | SCREW (M2.6), CROSS (HOLE) BIND |
| B15 | 4-635-301-01 | SCREW M3X4 |
| B17 | 7-622-205-05 | NUT M2 TYPE2 |
| B18 | 4-635-966-11 | SCREW (HEX) |
| B19 | 7-621-772-70 | SCREW +B 2X14 |
| B25 | 3-181-686-01 | NUT (N3)(3X0.35) |
| B27 | 4-644-790-01 | NUT FOR PANEL MOUNT |
| B28 | 4-644-789-01 | GUIDE SOCKET |

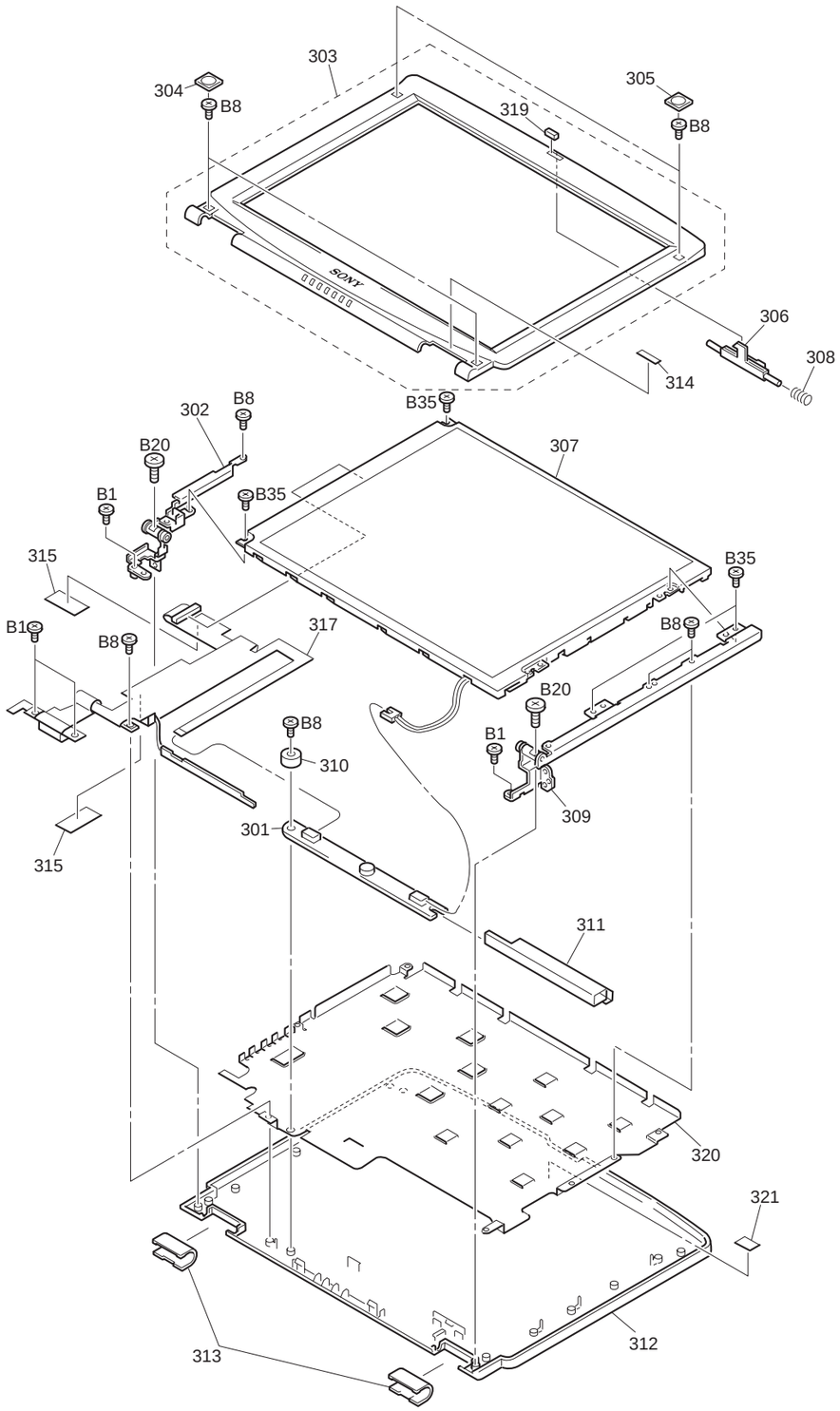
# 5-2. LCD Section (F480/F490 Model)




| Ref.No. | Part No. | Description |
|---|---|---|
| 201 | 1-475-809-31 | INVERTER UNIT |
| 202 | X-4622-447-2 | HINGE LEFT 15G |
| 203 | X-4622-416-4 | ASSY HOU, BEZEL 15X (UC) |
| 206 | 4-637-902-41 | LATCH |
| 207 | 1-418-574-21 | LCD-UNIT (15.0" TFT-XGA) |
| 208 | 4-637-903-01 | SPRING LATCH |
| 210 | 4-635-274-01 | BRACKET INVERTER |
| 211 | 4-646-808-01 | INVERTOR (15)(N), INSULATOR |
| 212 | X-4622-253-1 | ASSY HOUSING DISPLAY 15X |
| 213 | 4-642-762-11 | COVER HINGE (15) |
| 214 | 4-646-284-21 | (F480)...LABEL ID (UC) |
| 214 | 4-646-284-11 | (F490)...LABEL ID (UC) |
| 215 | 4-641-768-01 | TAPE (LCD), GND |
| 219 | 1-676-421-11 | PWB, LCD FLEXIBLE PRINT |
| 220 | 4-642-755-01 | BRACKET LCD (DL) 15 |
| 221 | 4-642-756-01 | BRACKET LCD (BL) 15 |
| 222 | 4-642-757-01 | BRACKET LCD (DR) 15 |
| 223 | 4-642-758-01 | BRACKET LCD (BR) 15 |
| 224 | 4-646-217-01 | COVER SCREW SIDE (15) |
| 225 | 4-635-277-11 | COVER SCREW LOWER |
| 226 | 4-643-549-01 | COVER SCREW SHAFT |
| 228 | X-4622-448-1 | HINGE RIGHT 15G |
| 229 | 4-643-366-11 | EDGE GUARD HINGE (15) |
| 231 | 4-643-837-01 | SHIELD (LCD) |
| 234 | 4-635-276-11 | COVER SCREW UPPER |
| 235 | 4-642-760-01 | CUSHION CENTER |
| 236 | 4-646-216-01 | SHIELD TAPE (LCD) L |
| 237 | 4-645-496-01 | CUSHION KEYBOARD |
| 238 | 4-644-332-01 | SPACER (LCD) |

| Ref.No. | Part No. | Description |
|---|---|---|
| B1 | 4-641-726-41 | SCREW (M2), SPECIAL HEAD |
| B8 | 4-641-726-11 | SCREW (M2), SPECIAL HEAD |
| B22 | 4-642-761-01 | +P M2X3 LOCK |
| B23 | 4-644-165-01 | SCREW (M2.6X4), 0 PLATE P1 MAIN |
| B30 | 4-643-550-01 | +P 2.6X6 LOCK PRECISION TYPE3 |

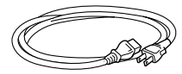
# 5-3. LCD Section (F420 Model)



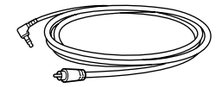

| Ref.No. | Part No. | Description |
|---|---|---|
| 301 | 1-418-578-12 | INVERTER UNIT |
| 302 | X-4622-615-1 | HINGE LEFT 13 (SH) |
| 303 | X-4622-614-2 | ASSY HOU, BEZEL 13 (SH) |
| 304 | 4-635-277-11 | COVER SCREW LOWER |
| 305 | 4-635-276-11 | COVER SCREW UPPER |
| 306 | 4-637-902-31 | LATCH |
| 307 | A-8046-837-A | LCD (SHARP 13" HPA) |
| 308 | 4-637-903-01 | SPRING LATCH |
| 309 | X-4622-684-1 | HINGE RIGHT 13 (SHL) |
| 310 | 4-635-274-01 | BRACKET INVERTER |
| 311 | 4-643-767-11 | INSULATOR INVERTER (TR) |
| 312 | X-4622-613-1 | ASSY HOU, DISPLAY 13 (SH) |
| 313 | 4-642-762-11 | COVER HINGE (15) |
| 314 | 4-646-284-51 | LABEL ID (UC) |
| 315 | 4-641-768-01 | TAPE (LCD), GND |
| 317 | 1-677-369-11 | FPC (SHARP 13" HPA) |
| 319 | 4-642-760-01 | CUSHION CENTER |
| 320 | 4-646-236-01 | PLATE LCD 13 (SH) |
| 321 | 4-636-094-01 | CUSHION FLASH |
| B1 | 4-641-726-41 | SCREW (M2), SPECIAL HEAD |
| B8 | 4-641-726-11 | SCREW (M2), SPECIAL HEAD |
| B20 | 7-628-254-00 | SCREW +PS 2.6X5 |
| B35 | 4-645-497-11 | SCREW (M2.6), CROSS (HOLE) BIND |

| Ref.No. | Part No. | Description |
|---|---|---|
| | | ACCESSORIES |
| | | ********** |
| ⚠401 | 1-782-614-11 | CORD, POWER |
| 402 | A-8046-136-A | ASSY WEIGHT SAVER (NHA) |
| ⚠403 | 1-418-579-12 | ADAPTOR, A.C. |
| 404 | 1-528-934-13 | (F420)...BATTERY PACK, LITHIUM ION |
| 404 | 1-528-935-11 | (F480/F490)... PACK, LITHIUM ION BATTERY |
| 405 | 1-575-875-11 | CORD, CONNECTOR |
| | 4-646-366-11 | USER GUIDE |
| | 4-646-367-11 | READ ME FIRST |

**401**
Power cord (1)

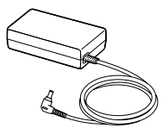


**405**
Video cable (1)



**402**
Weight saver (1)

**403**
AC adaptor (1)



**404**
Battery pack (1)

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

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